

**Before the
NATIONAL TELECOMMUNICATIONS
AND INFORMATION ADMINISTRATION
U.S. Department of Commerce
Washington, D.C. 20230**

In the Matter of)	
)	
Development of the Nationwide)	Docket No. 120928505-2505-01
Interoperable Public Safety Broadband)	
Network)	

**COMMENTS OF
SOUTHERN COMPANY SERVICES, INC.**

Southern Company Services, Inc. (“Southern”), on behalf of itself and its operating affiliates, hereby submits its comments in response to the Notice of Inquiry (“NOI”) issued by the National Telecommunications and Information Administration (“NTIA”) on behalf of the First Responder Network Authority (“FirstNet”) seeking public comment on a conceptual network architecture and on the general concept of how to develop applications for users of the network.¹

By way of introduction, Southern Company Services, Inc. is a wholly-owned subsidiary service company of Southern Company, a super-regional energy company in the Southeast United States. Southern Company also owns four electric utility subsidiaries – Alabama Power Company, Georgia Power Company, Gulf Power Company, and Mississippi Power Company – which provide retail and wholesale electric service throughout a 120,000 square mile service territory in Georgia, most of Alabama, and parts of Florida and Mississippi. Another Southern

¹ The NOI was published in the Federal Register on September 28, 2012. On October 31, 2012, NTIA extended the comment deadline to November 9, 2012.

Company subsidiary, Southern Communications Services, Inc. dba SouthernLINC Wireless, has built and operates a utility-grade mobile communications network to serve the needs of its electric company affiliates, as well as public safety, government, and private sector users throughout the Southeastern United States. Because of its involvement in public safety communications, Southern has been closely following the public discussions regarding FirstNet and the Public Safety Broadband Network (“PSBN”). Southern is pleased to offer the following comments based on its experience in building, maintaining, and using highly reliable, wide-area communications networks to support its provision of essential electric service to the public, and because of the potential for the PSBN to be used by utilities and other Critical Infrastructure Industries (“CII”) to support these public safety-related activities.

I. A Conceptual Framework for the PSBN

The NOI seeks input on a conceptual framework for the PSBN that addresses the following criteria:

1. Meets public safety’s requirements for priority, quality of service and preemption features;
2. Uses, to the extent possible, existing infrastructure in order to maximize coverage and performance while minimizing capital expenditures;
3. Reaches operational capability as quickly as possible; and
4. Enable voice services (cellular telephony and push-to-talk (“PTT”) both within the FirstNet network as well as to/from other networks, including the public switched telephone network (“PSTN”).

As a general matter, Southern agrees with the foregoing criteria and the recommendation that FirstNet should seek to leverage existing investments and capabilities of a diverse array of service providers and network operators. It is unrealistic to think that a standalone nationwide PSBN can be constructed from the ground up with the limited funding currently available, and

particularly given the economic uncertainties surrounding the willingness or ability of public safety agencies to pay for network access. At the same time, there could be inherent conflicts of interest and network management issues if FirstNet elects to work with a single nationwide wireless operator. Southern therefore encourages FirstNet to give further consideration to the conceptual framework presented by Board member Craig Farrill, including recognition that such a framework could improve opportunities for viable public/private partnerships with utilities and other CII.

With respect to the second criteria mentioned above – relying on existing infrastructure to maximize coverage and performance while minimizing capital expenditures – Southern has some concern that relying on “existing infrastructure” will not necessarily “maximize coverage and performance” if the existing infrastructure is not capable of performing to public safety or CII standards in all conditions. For Southern and other CII entities, it is imperative to have communications facilities that remain operational during and following storms or other widespread incidents to coordinate service restoration as a matter of public health and safety. Public safety agencies have at least the same need for continuous availability of communications during and following disasters. As illustrated by the recent devastation caused by Superstorm Sandy, prompt restoration of electric service is a matter of public health and safety, including for the restoration of communications services to the public when carriers’ limited backup power is depleted.² According to the Department of Energy, over 8 million customers lost commercial

² It was reported that as many as 25% of commercial cellsites in the areas affected by Superstorm Sandy were taken out of service, many due to loss of commercial power. Two days later, approximately 19% of the cellsites were still out of service. “Outages Expose Wireless Carriers’ Backup Plans,” Wall Street Journal, Nov. 2, 2012, p. B1 (available online at <http://online.wsj.com/article/SB10001424052970203707604578093220126444306.html>; last visited Nov. 6, 2012). Verizon Wireless, AT&T, and Sprint all reported that their difficulties in

Continued...

power during the storm, and as of November 7, a week after the storm, over 650,000 customers were still without power.³ If FirstNet expects public safety agencies and CII entities to use the PSBN for critical communications in support of public safety, health, and welfare – and particularly when the public’s need for emergency service is greatest – the PSBN must incorporate backup power capabilities that far exceed those of most commercial carriers in today’s market. Southern therefore urges FirstNet to review carriers’ performance during Superstorm Sandy, and similar disasters, when developing standards by which the performance of existing infrastructure can be evaluated for potential use in the PSBN.

II. A Conceptual Framework for Applications

The NOI also seeks input on a conceptual framework for developing applications for use on the PSBN. Southern offers the following comments in response to the specific questions raised in the NOI regarding applications:

1. Suggestions for Applications that Would Benefit Public Safety Users.

Because voice dispatch is so critical to public safety operations as well CII users, Southern urges prompt development of standards for PTT, including the capability for large

restoring wireless service in New York City was due to resolution of commercial power issues. “Hurricane Sandy: Operators Struggle to Restore Service in Worst-Hit Areas,” TelecomEngine.com; <http://www.telecomengine.com/article/hurricane-sandy-operators-struggle-restore-service-worst-hit-areas>; last visited Nov. 9, 2012). Even cellsites on wheels (COWs) were reportedly hampered in New York City by limited access to power and ability to interconnect with the phone network itself. “Cellphone Users Steaming at Hit-or-Miss Service,” New York Times, Nov. 3, 2012, p. B6 (available online at <http://www.nytimes.com/2012/11/03/technology/cellphone-users-steaming-at-hit-or-miss-service.html>; last visited Nov. 9, 2012).

³ U.S. Department of Energy, Office of Electricity Delivery and Energy Reliability.

group calls, on LTE systems. Southern has significant experience with both private and commercial PTT services, and offers the following recommendations for PTT on the PSBN:

- PTT solution must support one to one private communications. Target subscribers must be identifiable by a unique ID. Target must be able to be “alerted” with an audio and visual indication that someone is trying to reach them.
- PTT solution must support group (one-to-many) dispatch communications – using pre-provisioned talkgroups. Pre-provisioned talkgroups are very important for emergency operations and pre-planning of communications policy.
- PTT solution is preferred to run on ruggedized MIL SPEC handsets that have a dedicated PTT button. Device must be able to withstand high temp, low temp, dust, and shock.
- PTT audio should be supported through Bluetooth and headset jack to promote hands free operation.
- PTT solution should have a server component to help quickly route PTT calls from target to destination devices and add reliability. A server solution also allows users to quickly be disabled in case a device is lost or a rogue user starts transmitting.
- Handset needs to have a high quality speaker to allow PTT calls to take place with the device held out from the face. Device’s speaker should be capable of being heard in noisy environments.
- PTT solution must allow for computer dispatch functionality so that a traditional dispatcher can more easily manage multiple talkgroups and users.
- PTT solution should allow for patching of talkgroups and users to alternative radio and PTT solutions promoting interoperability between systems.

For utility users in particular, Southern recommends development of control system applications that could be used to de-energize power lines during storms or other natural disasters to protect the public and first responders. Utilities would also benefit from applications that can provide mapping and power system schematics by which crews would have access to real-time information to assist in locating lines and circuits, checking status of the power system, verifying direction of power flows, assessing line loading, etc. Availability of such information

in the field would greatly facilitate repairs after major system outages, and would be of significant benefit to crews from neighboring utilities that are brought in to help local crews restore service.

2. Interface Requirements and Other Information Innovators Need in Order to Develop Applications in an Open Environment.

Southern recommends establishment of a body to set and maintain open standards for applications developed for use on the PSBN.

3. Specific Requirements Public Safety Needs in its Applications.

Because the PSBN, by its very nature, is intended to provide a higher level of reliability and security for critical public safety-related communications, the network, as well as applications designed for the network, should include the following safeguards:

- Some level of voice encryption
- Protection from signal interference
- Authorization and authentication of devices
- Monitoring of infrastructure
- Patching, remediation and tracking of exploits

4. Ideas as to What Framework or Organizational Factors Would Allow for the Development of the Greatest Number of Quality Applications.

At its most elementary level, all applications should be IP-compatible and conform to open standards.

5. Specific Suggestions for FirstNet's Application Certification Requirements.

Southern agrees that application certification is important but has no preference as to how it should be accomplished.

6. Possible Delivery Methods.

Although there are various ways applications could be distributed, the application store model by certified developers is one method that is worthy of further review.

7. Other Issues that FirstNet Should Consider in Facilitating the Development of Public Safety Applications.

Although these are not application-specific issues, Southern strongly recommends that FirstNet promote development of roaming standards for LTE. Roaming capability was cited by the Technical Advisory Board for First Responder Interoperability as feature that should be included in public safety devices:. “FirstNet should ensure that its devices enable FirstNet to enter roaming agreements and public-private partnership arrangements with any commercial service provider and allow FirstNet users to obtain service in those commercial networks. A device that is capable of obtaining such service in certain bands shall operate on all FirstNet roaming partner networks operating in those bands and not be locked to a subset of FirstNet roaming partner networks operating in those bands.”⁴ By extension, FirstNet should ensure that applications are not blocked when a user roams onto another network.

Finally, Southern recommends that FirstNet give careful consideration to the proper use of the LTE prioritization and quality of service features to optimize network use. FirstNet should

⁴ *Recommended Minimum Technical Requirements to Ensure Nationwide Interoperability for the Nationwide Public Safety Broadband Network*, Final Report of the Technical Advisory Board for First Responder Interoperability, May 22, 2012, at Sec. 4.2.1.3.

strive to ensure that all network users can be accommodated to the extent of recognized priorities so that preemption of any public safety or CII user can be avoided at all costs.

Respectfully submitted,

SOUTHERN COMPANY SERVICES, INC.

/s/ Jeffrey L. Sheldon

Jeffrey L. Sheldon

FISH & RICHARDSON P.C.

1425 K Street, N.W. 11th Floor

Washington, DC 20005

T: 202-626-7761

E: jsheldon@fr.com

Its Attorney

November 9, 2012